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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,129	07/16/2003	Yuriy Gmirya	67,008-070;S-5668	1958

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EXAMINER

LE, DAVID D

ART UNIT	PAPER NUMBER
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3681

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/621,129	GMIRYA, YURIY	
	Examiner	Art Unit	
	David D. Le	3681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-24 and 26-37 is/are pending in the application.
- 4a) Of the above claim(s) 28-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-24,26 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This is the fifth Office action on the merits of Application No. 10/621,129, filed on 16 July 2003. Claims 1, 3-24, and 26-37 are pending. Of those pending claims, claims 28-37 are withdrawn from consideration as being directed to a non-elected species.
2. The finality of the last Office action is withdrawn in view of the newly found prior art, as set forth in the art rejection(s) below.

Documents

3. The following documents have been received and filed as part of the patent application:
 - Information Disclosure Statement, received on 7/16/03
 - Information Disclosure Statement, received on 08/24/05

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 1, 3-7, 12-24, and 26-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claims 1, 3-7 and 20-24:

- Claim 1, lines 4-5 recite the limitation “a floating pinion gear driven by a radially unsupported pinion shaft, said floating pinion gear mounted for rotation about a

floating pinion axis of rotation which provides a flexibility". It is unclear what applicant is referring to by reciting, "which provides a flexibility". In other words, it is unclear whether the terms "which provides a flexibility" should be construed as providing an ability to be adapted to perform a plurality of different tasks or as providing the resilient characteristic of the pinion shaft. For the purpose of applying the art rejection below, examiner interprets the terms "which provides a flexibility" as --which provides a resilient characteristic--.

- Claim 1, line 12 recites the limitation "a load". It is unclear whether this newly recited limitation is different from the one, which is first recited on line 9 of the claim.

Claims 12-19 and 26-27:

- Claim 12, lines 3-5 recite the limitation "driving a floating pinion gear about a pinion gear axis of rotation through a radially unsupported pinion shaft which provides a flexibility". It is unclear what applicant is referring to by reciting, "which provides a flexibility". In other words, it is unclear whether the terms "which provides a flexibility" should be construed as providing an ability to be adapted to perform a plurality of different tasks or as providing the resilient characteristic of the pinion shaft. For the purpose of applying the art rejection below, examiner interprets the terms "which provides a flexibility" as --which provides a resilient characteristic--.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 01/98100 A1 to Pengilly.**

Claims 1 and 12:

Pengilly (i.e., Figs. 1-2; page 7, lines 8-23 and page 9, lines 4-10) discloses a gear assembly comprising:

- A first spur gear (i.e., Fig. 1, element 16a) mounted on shaft (i.e., Fig. 1, element 18a) for rotation about a first spur gear axis of rotation;
- A second spur gear (i.e., Fig. 1, element 16b) mounted on shaft (i.e., Fig. 1, element 18b) for rotation about a second spur gear axis of rotation;
- A floating pinion gear (i.e., Fig. 1, element 14) driven by a radially unsupported pinion shaft (i.e., Fig. 2, element 12), said floating pinion gear (14) mounted for rotation about a floating pinion axis of rotation, said floating pinion gear (14) meshed with said first spur gear (16a) and said second spur gear (16b), said floating pinion axis of rotation displaceable to split a load between said first spur gear and said second spur gear, said floating pinion axis of rotation, said first spur gear axis of rotation, and said second spur gear axis of rotation located along a

common line, said floating pinion axis of rotation displaceable off said common line to split said load between said first spur gear and said second spur gear (i.e., Figs. 1 and 2; page 7, lines 13-19).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 3-11, 13-24 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 5,813,292 to Kish et al. in view of WO 01/98100 A1 to Pengilly.**

Claims 3-11, 13-24 and 26-27:

Kish (i.e., Figs. 1-2 and 6; column 1, line 50 – column 13, line 62) discloses a split path transmission system comprising:

- An input shaft (104L or 104R);
- A face gear (being the bevel gear 112L or 112R) driven by the input shaft about a face gear axis of rotation (see Fig. 1);
- A first spur gear (116L Fwd or 116R Fwd) mounted for rotation about a first spur gear axis of rotation (see Fig. 1);

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- A second spur gear (116L Aft or 116R Aft) mounted for rotation about a second spur gear axis of rotation (see Fig. 1);
- A pinion (114L or 114R) driven by a pinion shaft mounted to the face gear, the pinion meshed with the first spur gear and the second spur gear, and the pinion mounted for rotation about a pinion axis of rotation (see Fig. 1);
- A first double helical gear (118L Fwd or 118R Fwd);
- A second double helical gear (118L Aft or 118R Aft);
- An output gear (108) meshed with the first and second double helical gears (see Fig. 1);
- A main rotor shaft (102) driven by the output gear;
- Wherein the input shaft is driven by a gas turbine engine (column1, lines 50-55);
- Wherein the face gear defines a gear face perpendicular to the face gear axis of rotation, and the input shaft angled relative to the gear face (see Fig. 1);
- Wherein said pinion gear is mounted to said radially unsupported pinion shaft in a cantilever manner (see Fig. 1);
- Wherein said pinion gear is mounted to a distal end of said radially unsupported pinion shaft (i.e., Fig. 1); and
- Wherein said pinion axis of rotation, said first spur gear axis of rotation, and said second spur gear axis of rotation are located along a common curved line (i.e., Fig. 2).

Kish does not explicitly teach a floating pinion gear driven by a radially unsupported pinion shaft, which provides a resilient characteristic to allow the floating pinion axis of rotation to be displaceable off the common curved line to split a load between the first spur gear and the second spur gear.

Pengilly (i.e., Figs. 1-2; page 7, lines 8-23 and page 9, lines 4-10), on the other hand, teaches a gear assembly comprising a floating pinion gear (14) driven by a radially unsupported pinion shaft (12), which provides a resilient characteristic to allow the floating pinion axis of rotation to be displaceable off the common curved line to split a load between the first spur gear and the second spur gear (i.e., Figs. 1 and 2; page 7, lines 13-19).

It would have been obvious to one of ordinary skill in the art at the time this invention was made, to recognize the importance and advantage of being able to evenly distributing load between an input floating pinion and two of its meshing spur gears, to modify Kish's gear train branches 106L and 106R such that the pinion gear 114L and 114R are floating pinions, which are driven by a pair of radially unsupported and flexible pinion shafts, in view of Pengilly teaching of floating pinion gear, in order to evenly distributing a torque between the floating pinion gear and its meshing first and second spur gears (i.e., Pengilly, page 5, lines 10-26).

Response to Arguments

10. Applicant's arguments, see page 3-4 of the Remarks, filed on 16 January 2006, with respect to the rejection(s) of claim(s) 1, 3-24, and 26-27 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of WO 01/98100 A1.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Pengilly (U. S. Patent No. 6,746,356) teaches a gear transmission as shown in Figs. 1-2.
- Maurer et al. (U. S. Patent No. 6,035,956) teaches an offset axle, as shown in Fig. 2.
- Danielsson (U. S. Patent No. 3,678,775) teaches an apparatus for transmitting rotational power to a roll, as shown in Fig. 1.
- F. Fritsch (U. S. Patent No. 3,456,520) teaches a transmission, as shown in Fig. 1.

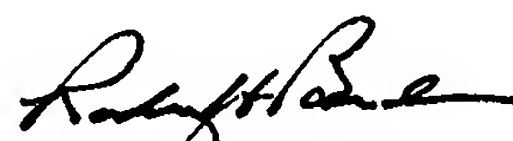
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Le whose telephone number is 571-272-7092. The examiner can normally be reached on Mon-Fri (0700-1530).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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PRIMARY EXAMINER
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